

### **REMARKS**

Claims 1 and 5 have been amended. Claims 1-12 remain in the application. Support for the amendments may be found throughout the Specification. Applicant asserts that no new matter has been added. Reconsideration of the Application is hereby requested.

Applicant thanks the Examiner for the interview granted on August 28, 2006. During the interview, Applicant's attorney contrasted the disclosures of the Hagenbuch and Kim references, which are directed to root canal therapy, to the present invention, which is directed to abutments used with dental implants. The Examiner indicated that adding limitations specifying the structure of an abutment and an implant would likely result in the overcoming of the rejection to Claim 1 under 35 U.S.C. §103. The Examiner indicated that Applicant was not required to file an Interview Summary and that the Examiner would place an Examiner's Interview Summary in the record.

#### ***Rejections Under 35 U.S.C. § 112***

Claim 5 was rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Applicant has amended Claim 5 to remove "alternatively." It is believed that this amendment overcomes the rejection and Applicant respectfully requests that it be withdrawn.

#### ***Rejections Under 35 U.S.C. § 103***

##### ***Rejection with respect to Claims 1, 4, 6, 8, 10 and 11:***

Claims 1, 4, 6, 8 and 10-11 were rejected under 35 U.S.C. § 103(a), as being unpatentable over Hagenbuch (2002/0025506) in view of Kim (6,267,597).

Initially, as discussed during the interview, the invention claimed in Claims 1, 4, 6, 8 and

10-11 is directed to abutments for dental implants. A dental implant, as is commonly understood in the art of implant dentistry, is a device that is placed in a pre-drilled hole in a patient's jawbone. An abutment is affixed to the implant and alveolar bone tissue is allowed to grow into the implant, thereby securing the implant. Typically, the implant is threaded and is screwed into the hole. The abutment is device that serves several purposes: firstly, the abutment keeps bone and other tissue from growing on the top portion of the implant during the period when the bone grows into the implant; secondly, then the abutment acts as an interface between the implant and a crown or other artificial tooth once the bone has secured the implant. Some implantologists employ two different abutments: one for securing the implant during bone regrowth and a different abutment (referred to as an "abutment for cement") to act as an interface. Recently, some implantologists have begun to use a single abutment for both functions. Both the terms "dental implant" and "abutment" have clear and definite meanings as used in the dental arts. (See, e.g., U.S. Patent Nos. 7,014,464; 6,932,606; 6,910,891; 6,814,577; D493,890; D487,153; D487,152; D487,150; D486,914; D486,912; 6,663,388; 6,592,370; 6,565,357; D469,535; 6,503,083; 6,500,003; 6,497,573; 6,471,515; 6,464,500; and 6,431,866 – the first twenty hits of a search of the U.S. Patent Office Web site using the search terms "dental implant" and "abutment." Please note that each of these references use these terms in a way that is completely consistent with the discussion above. )

In contrast, Hagenbuch et al. and Kim both disclose systems for use in root canal therapy. Hagenbuch et al., FIG. 1 and ¶ [0051] clearly teaches a system for placing a root pin in "a tooth root 1 with a root canal 2." Kim expressly states that "[t]he method of the present invention begins after root canal therapy has commenced" [Kim, col. 5, lines 1-18] and it discusses the invention only in the context of root canal therapy.

In root canal therapy, necrotic tissue is removed from the root of the patient's tooth, which remains intact, and the canal thus formed is filled with a filler. In cases where some or all of the above-gum portion of the tooth is removed, the filler can include one or more pins that interface the root of the tooth with a crown. These pins are permanently placed in the root canal.

In root canal therapy, at least the root of the patient's tooth remains intact and no hole is drilled in the jawbone to receive an implant.

Neither Hagenbuch et al. nor Kim disclose either a dental implant or an abutment, as the terms are given their ordinary meanings in the implant dentistry art. Hagenbuch et al. does not use either the term "implant" or "abutment" anywhere in the application and Kim does not use the term "abutment." While Kim uses the term "implant" only once, in the Abstract, it does not use that term anywhere else, nor does it use "implant" in a manner that is consistent with the well known usage in the art of implant dentistry.

Applicant has amended Claim 1 to make it clear that the invention applies to an abutment of the type used to interface a dental implant to an artificial tooth. The amendment is clearly supported, *inter alia*, by FIGS. 4, 5, 6, 7, 8A and 8B, and the supporting written description. Because Claim 1 recites limitations relating to the use of a dental implant and an abutment and because neither of the cited references discloses any sort of dental implant or abutment, neither of the cited references teach or suggest the invention recited in Claim 1. Therefore, Applicant believes that this rejection has been overcome and respectfully requests that Claims 1, 4, 6, 8 and 10-11 be allowed.

*Rejection with respect to Claims 2-3 and 12:*

Claims 2-3 and 12 were rejected under 35 U.S.C. § 103(a), as being unpatentable over Hagenbuch in view of Kim further in view of Braiman (US 5,346,397). Applicant asserts that Braiman discloses a method of making artificial teeth, such as dental crowns. [See, Braiman, Abstract]. Nowhere does Braiman, either alone or in combination with Hagenbuch and Kim, teach or suggest a method for forming a shoulder part of an abutment for use with an implant, as recited in Claims 2-3 and 12. For these reasons Applicant believes that this rejection has been overcome and respectfully requests that Claims 2-3 and 12 be allowed.

*Rejection with respect to Claim 5:*

Claim 5 was rejected under 35 U.S.C. § 103(a), as being unpatentable over Hagenbuch in view of Kim further in view of Lustig (US 4,689,013). However, Lustig teaches a system for making restorative bridges [Lustig, Abstract] and makes no mention of forming a shoulder part of an abutment for use with an implant. For these reasons Applicant believes that this rejection has been overcome and respectfully requests that Claim 5 be allowed.

*Rejection with respect to Claim 7:*

Claim 7 was rejected under 35 U.S.C. § 103(a), as being unpatentable over Hagenbuch in view Kim. Applicant reasserts Claim 7 is distinguishable from Hagenbuch in view of Kim for the same reasons presented with respect to Claim 1. Therefore, Applicant believes that this rejection has been overcome and Applicant respectfully requests that Claim 7 be allowed.

*Rejection with respect to Claim 9:*

Claim 9 was rejected under 35 U.S.C. § 103(a), as being unpatentable over Hagenbuch in view Kim in further view of Ibsen (5,683,249). Because Claim 9 depends from Claim 1 and, thus, takes the limitations therefrom, it is distinguishable from Hagenbuch and Kim for the reasons presented with respect to Claim 1. Ibsen discloses use of a light-curable adhesive to secure an implant to the patient's bone. [See, e.g., Ibsen, col. 3, lines 27-35] The addition of Ibsen fails to teach or suggest anything relating to the formation of a shoulder portion of an abutment. For the above-recited reasons, Applicant believes that this rejection has been overcome and Applicant respectfully requests that Claim 9 be allowed.

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**CONCLUSION**

Applicant believes that the rejections have been overcome for the reasons recited above. Therefore, Applicant respectfully requests that all remaining claims be allowed and that a timely Notice of Allowance be issued.

No additional fees are believed due. However, the Commissioner is hereby authorized to charge any additional fees which may be required, including any necessary extensions of time, which are hereby requested, to Deposit Account No. 503535.

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Date



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